



BELL-Southcn Testing Laboratory(Shenzhen)

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SOLERGIE(QINGDAO) RENEWABLE ENERGY CO.,LTD

LumCAT: LED10W/SL100-G13(840)

Luminaire: LED Tube

Report No: BSR13120504-9

Voltage(V): 230.040

Test No: BSR13120504-9

Current(A): 0.049

LampCAT:

Power (W): 10.680

Lamp flux(lm)

PF: 0.943

Number of Lamps: 1

Ballast type:

Length(mm): 560

Width(mm): 26

Phm Type: C

Height(mm): 13

Photometric Results

Lumens(lm): 794.81

Lumens(lm)/Power(W): 74.42

Central intensity(cd): 217.158

Maximum intensity(cd): 217.306

Angle of maximum intensity: C=90.0 γ =10.0

Beam Angle(50%Imax): [C0/180]Left=55.2 Right=57.6

[C90/270]Left=72.5 Right=60.5

Field angle(10%Imax): [C0/180]Left=79.3 Right=83.0

[C90/270]Left=121.1 Right=107.5

Maximum s/h: C0_180=1.26 C90_270=1.36

Up flux rate of LUM(%): 9.19%

Down flux rate of LUM(%): 90.81%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 63.596%

Equipment:

Temperature($^{\circ}$ C): 25.0

C Testing Range: 0~360

Step: 30

Date: 2013-12-5

Humidity(%): 65.0%

γ Testing Range: 0~180

Operator: king

Distance(m): 12.20

Step: 10

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	217.158	.000	.000	.000%	.000%
10.0	213.486	20.554	20.554	2.586%	2.586%
20.0	202.311	58.932	79.486	7.415%	10.001%
30.0	184.760	89.581	169.067	11.271%	21.271%
40.0	162.769	109.159	278.225	13.734%	35.005%
50.0	137.578	116.301	394.526	14.632%	49.638%
60.0	109.745	110.944	505.471	13.958%	63.596%
70.0	81.453	94.893	600.363	11.939%	75.535%
80.0	55.170	72.267	672.631	9.092%	84.627%
90.0	34.915	49.144	721.775	6.183%	90.811%
100.0	22.165	31.139	752.914	3.918%	94.728%
110.0	13.334	18.777	771.691	2.362%	97.091%
120.0	8.025	10.600	782.292	1.334%	98.424%
130.0	5.123	5.898	788.189	.742%	99.166%
140.0	3.349	3.280	791.470	.413%	99.579%
150.0	2.307	1.777	793.246	.224%	99.803%
160.0	1.786	.947	794.194	.119%	99.922%
170.0	1.563	.475	794.668	.060%	99.982%
180.0	1.488	.146	794.814	.018%	100.000%

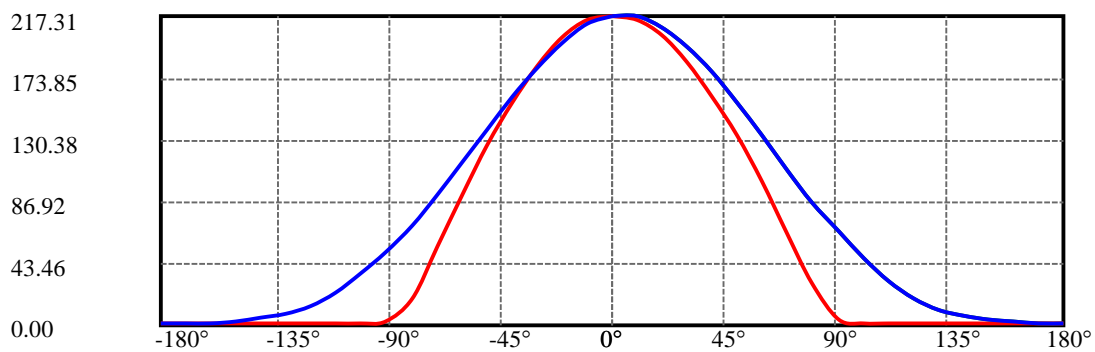
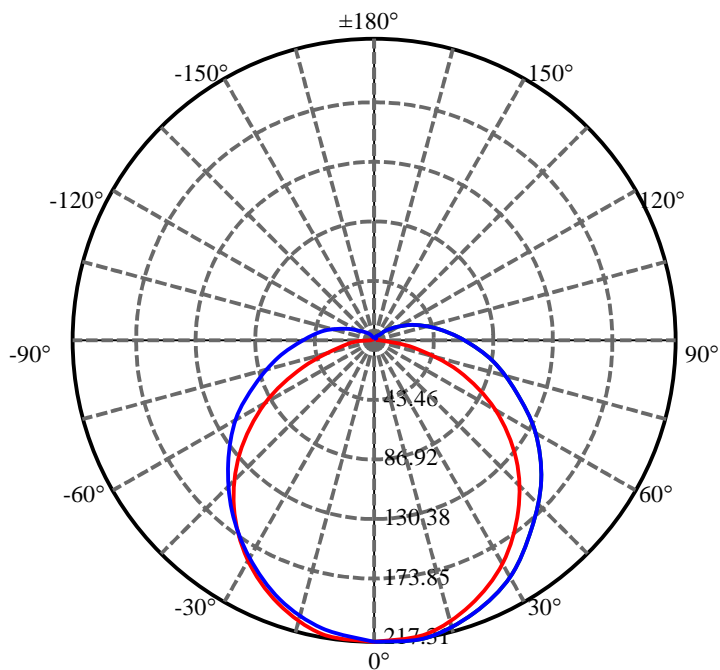


ZONAL LUMEN SUMMARY

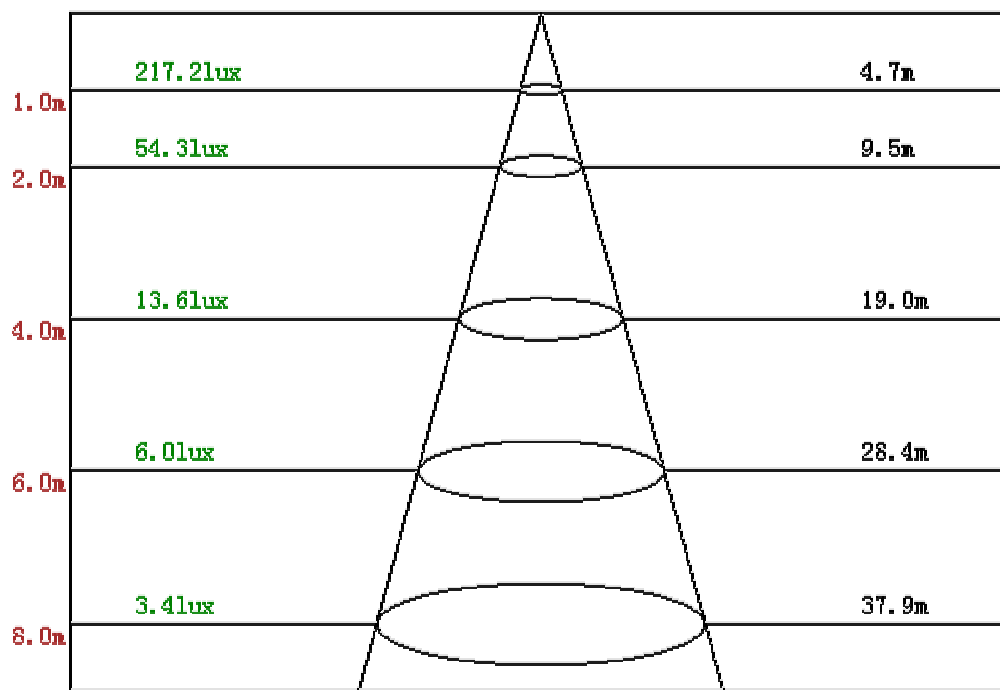
Zone	Lumens	%Fixt
0-30	169.07	21.27%
0-40	278.23	35.01%
0-60	505.47	63.60%
0-90	721.78	90.81%
0-120	782.29	98.42%
0-180	794.81	100.00%
60-90	327.25	41.17%
90-120	109.66	13.80%
90-130	115.56	14.54%
90-150	120.62	15.18%
90-180	122.04	15.35%
0-74.91	635.85	80.00%

ZONAL LUMEN SUMMARY

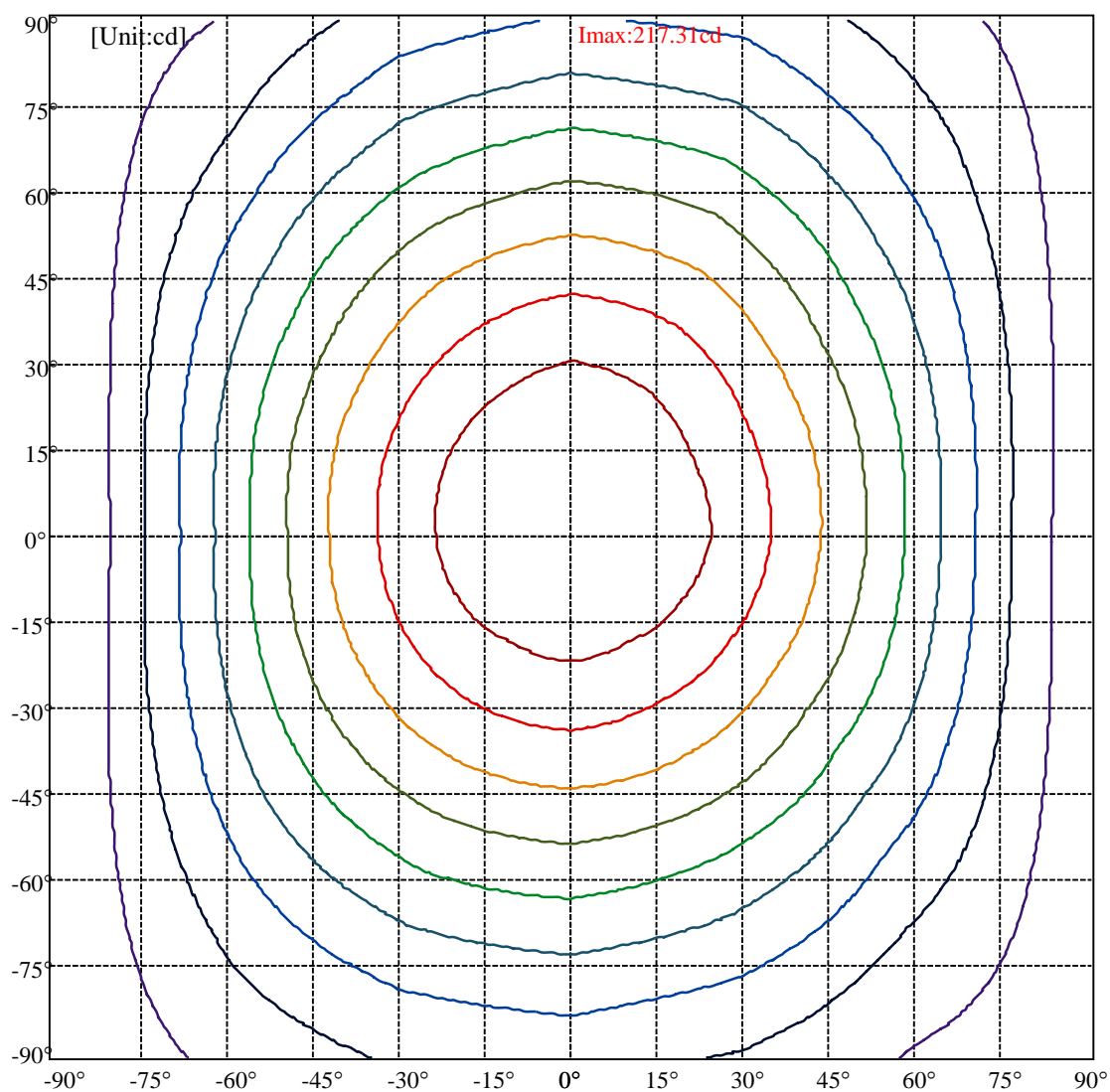
0-10	20.55
10-20	58.93
20-30	89.58
30-40	109.16
40-50	116.30
50-60	110.94
60-70	94.89
70-80	72.27
80-90	49.14
90-100	31.14
100-110	18.78
110-120	10.60
120-130	5.90
130-140	3.28
140-150	1.78
150-160	0.95
160-170	0.47
170-180	0.00



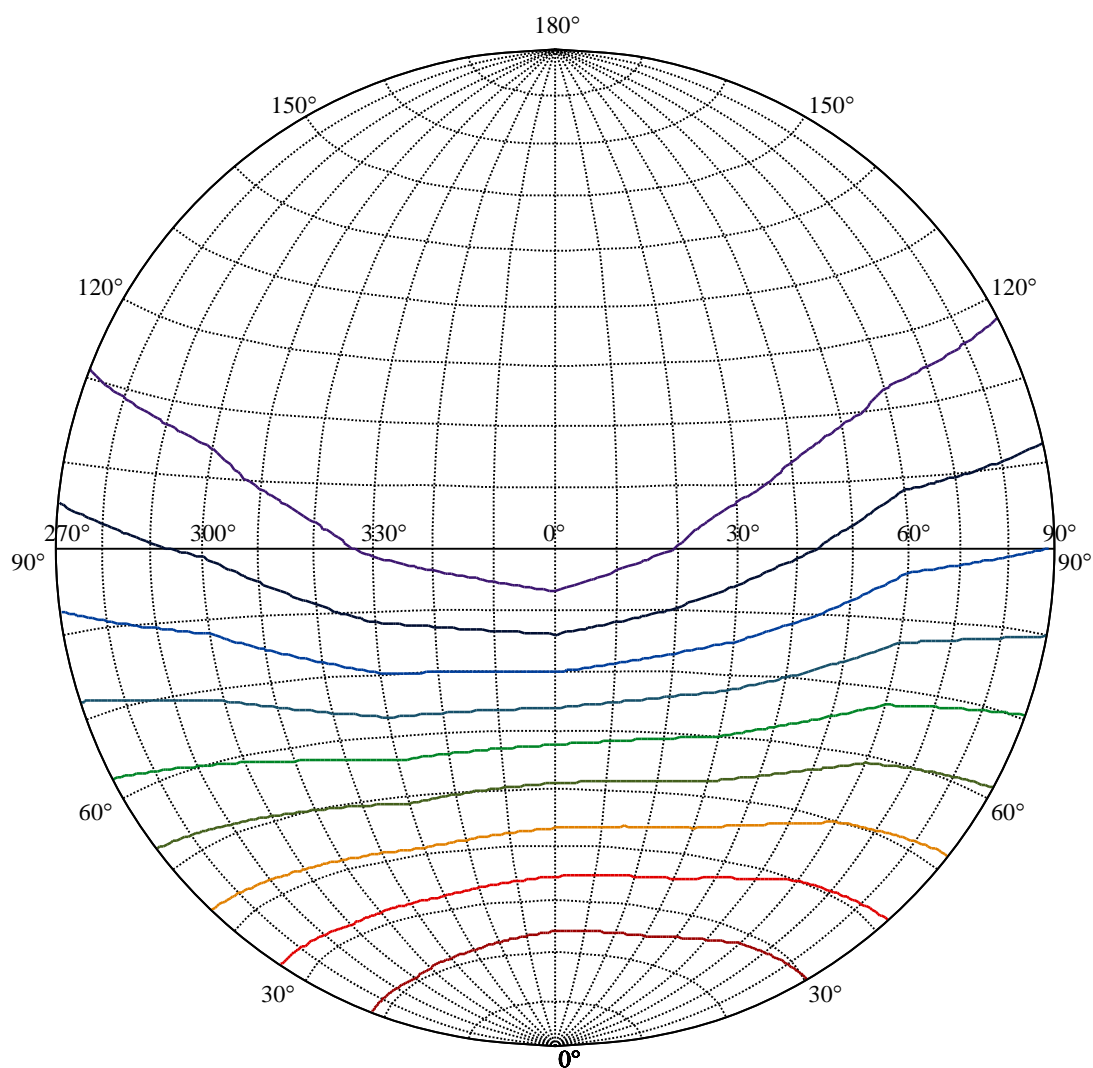
C90(Max): —
 C0/C180: —
 C90/C270: —



Beam angle of C90plane132.96



(10%Imax) 21.7306
(20%Imax) 43.4613
(30%Imax) 65.1919
(40%Imax) 86.9226
(50%Imax) 108.653
(60%Imax) 130.384
(70%Imax) 152.114
(80%Imax) 173.845
(90%Imax) 195.576



House

[Unit:cd]

Road

Imax:217.31

(10%Imax) 21.7306

(20%Imax) 43.4613

(30%Imax) 65.1919

(40%Imax) 86.9226

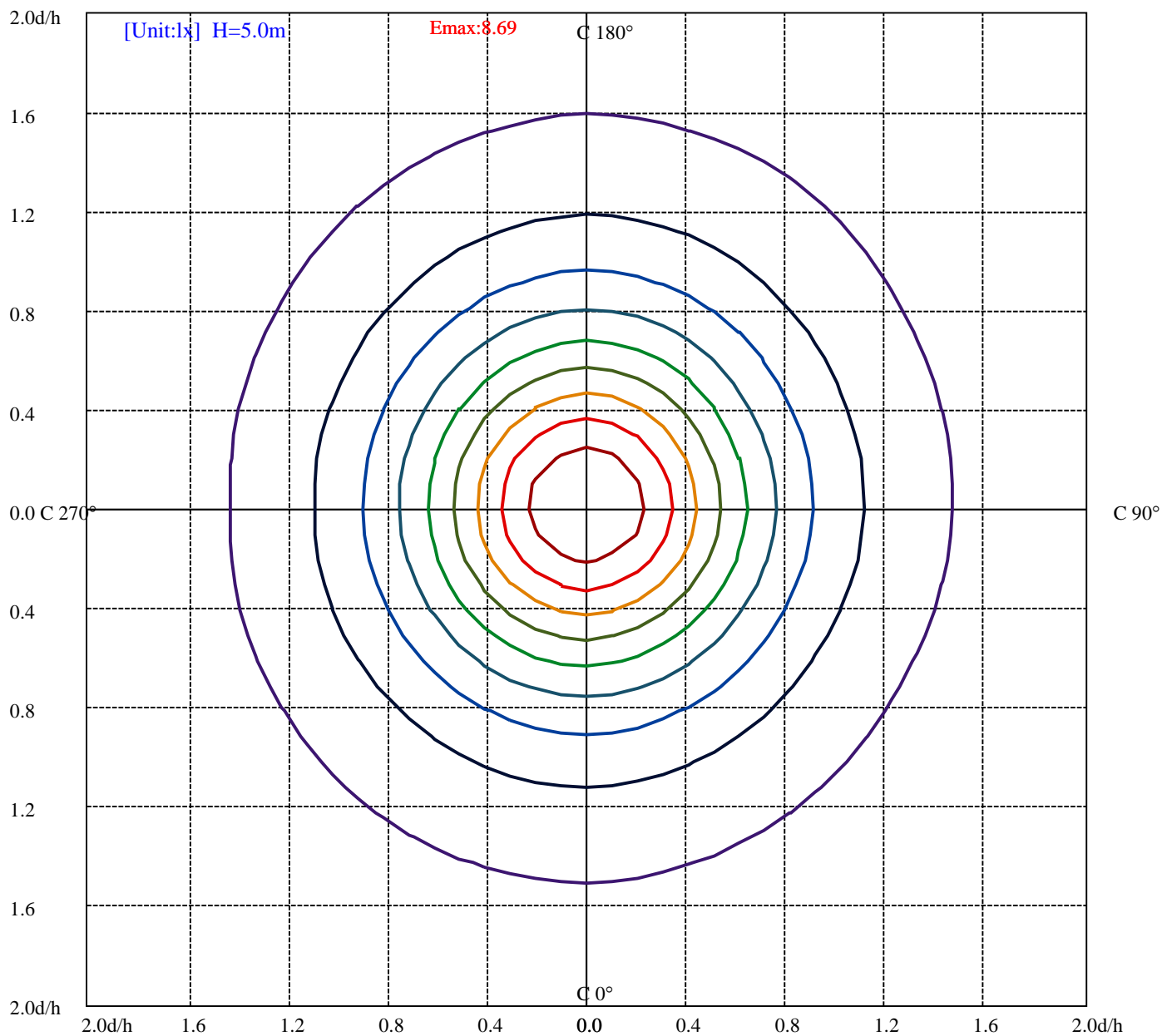
(50%Imax) 108.653

(60%Imax) 130.384

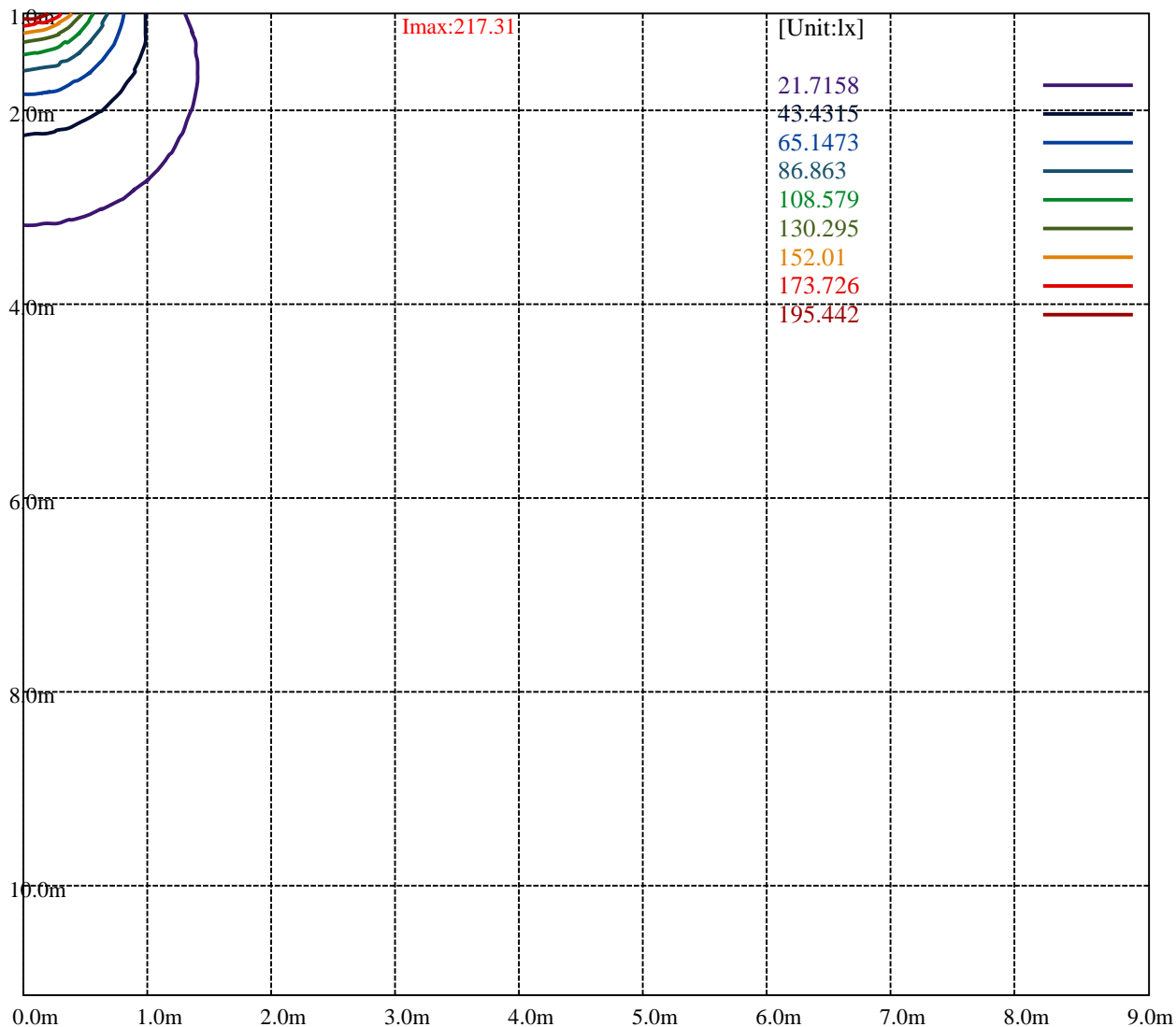
(70%Imax) 152.114

(80%Imax) 173.845

(90%Imax) 195.576



(10%Emax) 0.868628
(20%Emax) 1.73726
(30%Emax) 2.605888
(40%Emax) 3.47452
(50%Emax) 4.34316
(60%Emax) 5.21176
(70%Emax) 6.0804
(80%Emax) 6.94904
(90%Emax) 7.81768

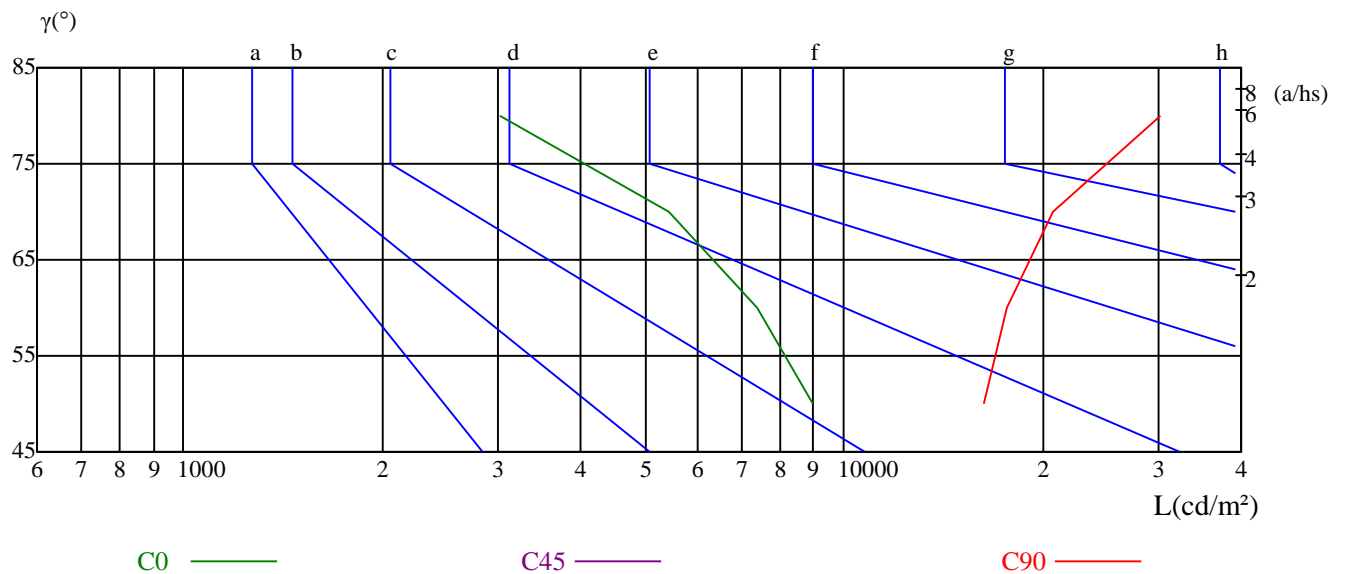


Luminance Table

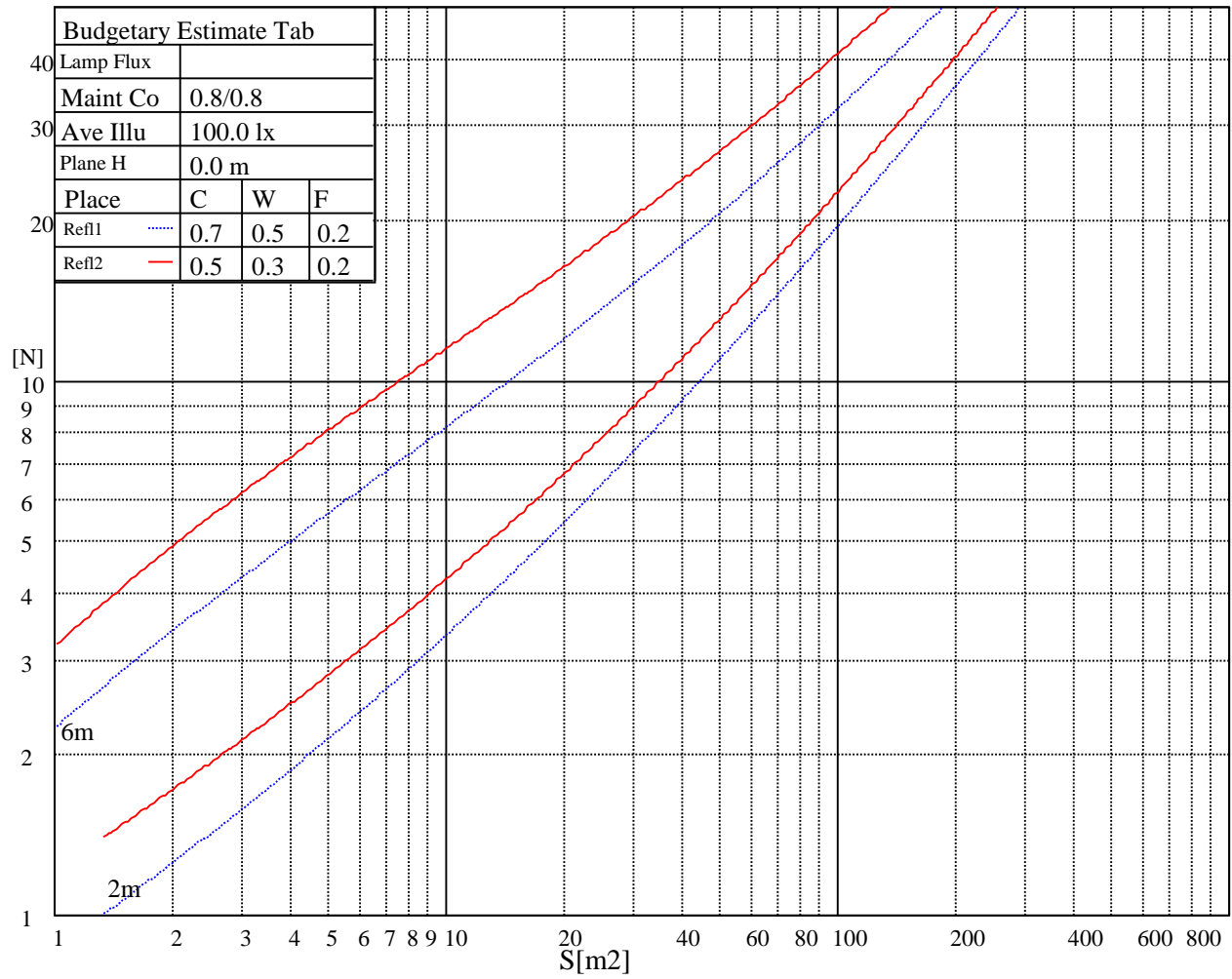
γ	45	50	55	60	65	70	75	80	85
C0	0	8969	0	7418	0	5439	0	3024	0
C45	0	0	0	0	0	0	0	0	0
C90	0	16295	0	17630	0	20707	0	30276	0

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve


Illuminatin assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	20.2	21.5	20.6	21.9	22.3	21.9	23.2	22.3	23.6	24.0
	3H	21.6	22.8	22.1	23.3	23.8	24.3	25.5	24.8	26.0	26.4
	4H	22.0	23.1	22.5	23.5	24.1	25.4	26.5	26.0	27.0	27.5
	6H	22.5	23.5	23.0	24.0	24.5	26.9	28.0	27.4	28.4	29.0
	8H	22.7	23.7	23.2	24.2	24.7	27.7	28.8	28.3	29.3	29.8
4H	12H	22.5	23.3	23.1	23.9	24.5	28.4	29.2	29.0	29.8	30.4
	2H	20.9	22.0	21.4	22.5	23.0	22.2	23.3	22.7	23.7	24.3
	3H	22.6	23.4	23.2	23.9	24.6	24.9	25.7	25.5	26.2	26.8
	4H	23.4	24.2	24.0	24.7	25.4	26.5	27.3	27.0	27.8	28.4
	6H	24.0	24.8	24.6	25.4	26.0	28.1	28.9	28.7	29.5	30.1
8H	8H	24.0	24.5	24.7	25.1	25.8	28.8	29.3	29.5	29.9	30.6
	12H	24.2	24.7	24.8	25.3	26.0	29.8	30.3	30.5	31.0	31.7
	4H	24.1	24.5	24.7	25.2	25.9	26.7	27.1	27.3	27.8	28.5
	6H	24.9	25.4	25.5	26.0	26.7	28.5	29.0	29.2	29.6	30.3
	8H	25.2	25.7	25.9	26.3	27.0	29.6	30.1	30.2	30.7	31.4
12H	12H	25.5	26.0	26.1	26.6	27.3	30.8	31.3	31.4	31.9	32.6
	4H	24.3	24.8	24.9	25.4	26.1	26.7	27.2	27.3	27.8	28.5
	6H	25.3	25.8	25.9	26.4	27.1	28.6	29.1	29.3	29.7	30.4
	8H	25.7	26.2	26.3	26.8	27.5	29.8	30.3	30.4	30.9	31.6
Variation with the observer position at spacings:											
S = 1.0H		0.2/-0.6					0.2/-1.1				
S = 1.5H		0.5/-0.6					0.4/-1.0				
S = 2.0H		0.5/-0.8					0.2/-0.7				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		9.7					13.2				
According 1000lm											



RHOC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.17	1.17	1.17	1.13	1.13	1.13	1.06	1.06	1.06	1.00	1.00	1.00	0.94	0.94	0.94	0.91
1	0.99	0.94	0.89	0.95	0.91	0.87	0.89	0.86	0.82	0.84	0.81	0.78	0.79	0.76	0.74	0.71
2	0.85	0.77	0.71	0.82	0.75	0.69	0.77	0.71	0.66	0.72	0.67	0.63	0.68	0.64	0.60	0.58
3	0.74	0.65	0.58	0.72	0.63	0.57	0.67	0.60	0.55	0.63	0.57	0.52	0.59	0.55	0.50	0.48
4	0.65	0.56	0.49	0.63	0.54	0.48	0.59	0.52	0.46	0.56	0.50	0.44	0.53	0.47	0.43	0.40
5	0.58	0.48	0.41	0.56	0.47	0.41	0.53	0.45	0.40	0.50	0.43	0.38	0.47	0.42	0.37	0.35
6	0.52	0.43	0.36	0.50	0.42	0.35	0.48	0.40	0.34	0.45	0.38	0.33	0.43	0.37	0.32	0.30
7	0.47	0.38	0.32	0.46	0.37	0.31	0.43	0.36	0.30	0.41	0.34	0.29	0.39	0.33	0.29	0.26
8	0.43	0.34	0.28	0.42	0.33	0.28	0.40	0.32	0.27	0.38	0.31	0.26	0.36	0.30	0.26	0.23
9	0.39	0.31	0.25	0.38	0.30	0.25	0.36	0.29	0.24	0.35	0.28	0.24	0.33	0.27	0.23	0.21
10	0.36	0.28	0.23	0.35	0.28	0.22	0.34	0.27	0.22	0.32	0.26	0.21	0.31	0.25	0.21	0.19

Intensity data(cd)										Page: 14 Total:14	
C/γ(°)	0.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0		
0.0	217.16	214.48	203.46	184.71	160.75	133.96	100.76	64.30	29.32		
30.0	217.16	214.48	204.06	186.20	164.17	137.97	108.65	79.48	52.24		
60.0	217.16	215.52	207.19	193.05	173.85	151.67	128.15	102.70	78.89		
90.0	217.16	217.31	209.42	196.02	177.57	156.73	133.51	109.70	86.62		
120.0	217.16	214.93	206.44	190.81	170.72	148.24	122.20	96.60	73.23		
150.0	217.16	215.52	204.36	186.05	162.38	134.25	102.85	71.29	42.27		
180.0	217.16	214.78	202.12	181.58	157.03	126.66	91.69	55.07	19.05		
210.0	217.16	211.50	199.30	179.95	156.28	130.09	100.76	71.59	46.29		
240.0	217.16	210.16	196.92	179.95	158.37	134.55	111.18	86.62	64.60		
270.0	217.16	211.35	198.25	180.99	160.00	137.23	114.31	91.39	70.10		
300.0	217.16	209.27	196.77	178.01	156.88	132.32	106.27	82.90	60.43		
330.0	217.16	212.54	199.45	179.80	155.24	127.26	96.60	65.79	39.00		
360.0	217.16	214.48	203.46	184.71	160.75	133.96	100.76	64.30	29.32		
C/γ(°)	90.0	100.0	110.0	120.0	130.0	140.0	150.0	160.0	170.0		
0.0	3.87	1.49	1.34	1.49	1.49	1.64	1.64	1.64	1.64		
30.0	31.26	17.71	8.78	5.21	3.87	2.83	2.08	1.79	1.64		
60.0	57.90	40.34	24.41	14.74	8.93	5.21	3.13	1.93	1.49		
90.0	65.49	47.03	31.41	18.46	11.16	6.10	3.57	2.08	1.49		
120.0	51.80	34.98	19.80	12.06	7.00	4.32	2.68	1.93	1.49		
150.0	21.73	9.53	5.21	3.42	2.68	2.38	1.93	1.79	1.64		
180.0	2.23	1.64	1.64	1.79	1.79	1.79	1.79	1.79	1.64		
210.0	26.49	13.25	6.40	4.02	2.83	2.23	1.93	1.64	1.64		
240.0	46.29	29.77	18.46	10.57	6.40	3.87	2.38	1.79	1.49		
270.0	51.65	35.87	22.77	13.25	7.89	4.76	2.68	1.79	1.49		
300.0	41.08	25.90	15.93	8.78	5.36	3.27	2.23	1.64	1.49		
330.0	19.20	8.48	3.87	2.53	2.08	1.79	1.64	1.64	1.64		
360.0	3.87	1.49	1.34	1.49	1.49	1.64	1.64	1.64	1.64		
C/γ(°)	180.0										
0.0	1.49										
30.0	1.49										
60.0	1.49										
90.0	1.49										
120.0	1.49										
150.0	1.49										
180.0	1.49										
210.0	1.49										
240.0	1.49										
270.0	1.49										
300.0	1.49										
330.0	1.49										
360.0	1.49										